



The Elizabeth Islands and Woods Hole as viewed from inside the West Tisbury Fire Tower. (See Appendix G for photo information.)

## SECTION 15. FIRE OBSERVATION TOWERS

### 15.1. INTRODUCTION

Fire has been part of the Cape Cod landscape for more than a thousand years (Motzkin et al. 2002), fueled in part by barrens vegetation that “produces abundant, flammable fuel which decomposes slowly creating the potential for wildfires” (Patterson et al. 2005). As human populations increased on the Cape and Islands and the landscape was developed, fire represented an increasing threat to public safety and property. From the mid-1800s through the early 1900s “fires were common across Cape Cod” (Motzkin et al. 2002). In response, a variety of laws were enacted to decrease the incidence of wildfires.

In 1882, statewide penalties were established for “wantonly and recklessly” setting fires that “cause the destruction or injury of any growing wood.” (Chapter 163 of the Acts of 1882) Four years later, the Massachusetts legislature directed cities and towns to create the position of “Forest Fireward” to “investigate all cases of fires in woodlands.” (Chapter 296 of the Acts of 1886) As the 20<sup>th</sup> century dawned, legislative focus shifted from fire prevention to fire suppression, with municipalities having responsibility for fighting forest fires. Each town’s forester was made “chief forest fireward,”

and given the authority to conscript males between the ages of 18 and 50 “to assist in suppressing or preventing” fire. (Chapter 254 of the Acts of 1897) The authority of firewards continued to increase into the early 1900s, at which time the responsibility for preventing and suppressing forest fires began to shift to the state.

In 1911, the position of State Fire Warden was created to “aid and advise” municipal officials “in preventing and extinguishing forest fires and in enforcing the laws relative to forest fires.” (Chapter 722 of the Acts of 1911) In 1922, the State Forester was authorized to acquire land for the purpose of constructing fire observation towers. (Chapter 185 of the Acts of 1922) Fire towers were soon constructed across the state, including on Cape Cod and Martha’s Vineyard.

There are currently seven active fire observation towers in the same geographic area as the Nickerson Management Complex (i.e., the Cape and Islands). They are:

- ***Sandwich Fire Observation Tower.*** Located on Telegraph Hill at 402 Route 130, within Shawme-Crowell State Forest.

- **Falmouth Fire Observation Tower.** Located atop Howlands Park Hill at 181 Fire Tower Road, on Town of Falmouth property.
- **Barnstable Fire Observation Tower.** Located atop Clay Hill at 576 Oak Street, on DCR property.
- **Dennis Fire Observation Tower.** Located atop Signal Hill at 68 Hokum Rock Road, on DCR property. A second parcel of DCR-owned land, 48 Hokum Rock Road, is contiguous with the tower parcel and provides utility access.
- **Brewster Fire Observation Tower.** Located atop Deer Park Hill, on Deer Park Road, within Nickerson state park.
- **Wellfleet Fire Observation Tower.** This tower is located on a small rise of land at 1947 State Highway (Route 6), on DCR property. Vehicular access to the tower is across private property.
- **West Tisbury Fire Observation Tower.** This tower is located atop an unnamed hill at 51 Fire Tower Road, on DCR property. An associated utility line easement crosses five abutting residential properties.

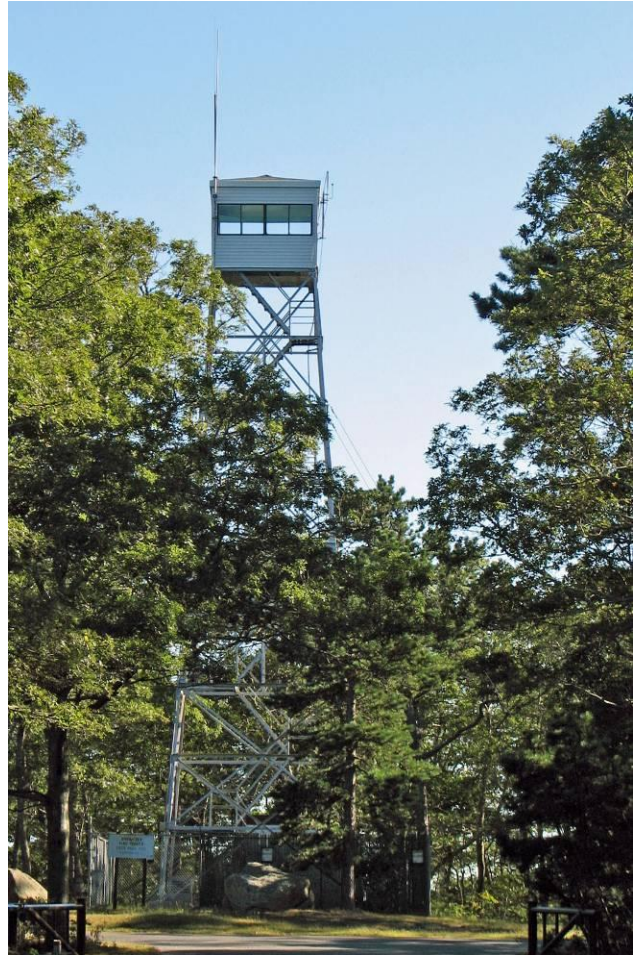
These towers' physical, political, and regulatory attributes are summarized in Table 15.1.1.

**Associated Properties.** There are eight fire observation towers in Fire Control District One. Only seven are located within the Nickerson Management Complex. The eighth is located in Bourne, within the Myles Standish Management Complex.

## 15.2. NATURAL RESOURCES

### Physical Features

Five of the seven towers are located on hilltops along glacial moraines; two, Brewster and Wellfleet, are not located on hills. Elevations range from 76 feet in Wellfleet to 292 feet in Sandwich.



Brewster fire observation tower. (See Appendix G for photo information.)

### Water Resources

Surface waters are absent from fire observation tower lots. (Table 15.2.1) Because of this, there are no predicted flooding impacts associated with 100-year storms, 500-year storms, hurricanes, or sea level rise.

**Table 15.1.1. Physical, political, and regulatory settings of fire observation towers on the Cape and Islands.**

	<b>Sandwich</b>	<b>Falmouth</b>	<b>Barnstable</b>	<b>Dennis</b>	<b>Brewster</b>	<b>Wellfleet</b>	<b>West Tisbury</b>
<b>Area (acres)<sup>a</sup>:</b>							
Parcel (Acres)	N/A <sup>b</sup>	N/A <sup>c</sup>	0.43	6.30	N/A <sup>d</sup>	0.23	1.59
Fenced-in Area (Feet <sup>2</sup> )	60 x 50	60 x 50	60 x 50	70 x 40	40 x 30	40 x 40	ca. 40 x 35
<b>Perimeter (miles)<sup>a</sup>:</b>	N/A	N/A	0.10	0.42	N/A	0.08	0.57
<b>Landscape Designation(s)<sup>e</sup>:</b>	Woodland	N/A	N/A	N/A	Parkland	N/A	N/A
<b>Legislative Districts:</b>							
House	5 <sup>th</sup> Barnstable	Barnstable, Dukes, & Nantucket	5 <sup>th</sup> Barnstable	1 <sup>st</sup> Barnstable	4 <sup>th</sup> Barnstable	4 <sup>th</sup> Barnstable	Barnstable, Dukes, & Nantucket
Senate	Plymouth & Barnstable	Plymouth & Barnstable	Cape & Islands	Cape & Islands	Cape & Islands	Cape & Islands	Cape & Islands
<b>Regulatory Designations:</b>							
Priority Habitat	Yes	No	No	No	Yes	Yes	Yes
Old King's Highway	No	No	Yes	Yes	No	No	No
Regional Historic District							
Dogtown Residential District	No	No	No	No	No	Yes	No

a. Calculated using a Geographic Information System (GIS).

b. Located in Shawme-Crowell State Forest; acreage included in that park's metrics.

c. Located on municipal property.

d. Located in Nickerson state park; acreage included in that park's metrics.

e. For a summary of the DCR's landscape designations, see <http://www.mass.gov/eea/docs/dcr/ld/ld-factsheet-final.pdf>.

**Table 15.2.1. Water resources of fire observation tower lots on the Cape and Islands.**

<b>Water Resource</b>	<b>Sandwich</b>	<b>Falmouth</b>	<b>Barnstable</b>	<b>Dennis</b>	<b>Brewster</b>	<b>Wellfleet</b>	<b>West Tisbury</b>
<b>Watershed:</b>	Cape Cod	Cape Cod	Cape Cod	Cape Cod	Cape Cod	Cape Cod	Islands
<b>Aquifer:</b>							
Lens	Cape Cod Sagamore	Cape Cod Sagamore	Cape Cod Sagamore	Cape Cod Monomoy	Cape Cod Monomoy	Cape Cod Chequesset	Martha's Vineyard N/A
<b>Rivers and Streams (miles)</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Vernal Pools</b>							
Certified (#)	0	0	0	0	0	0	0
Potential (#)	0	0	0	0	0	0	0
<b>Wetlands (acres)</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Lakes and Ponds (acres)</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00



## Rare Species

### State-listed Species

Four state-listed species are known from the towers. (Table 15.2.2) The moths are only known from the West Tisbury fire tower property, where they are associated with both scrub oak and tree oaks. The eastern box turtle is known from all fire towers on the Cape and Islands.

**Table 15.2.2. State-listed species of fire observation tower lots on the Cape and Islands, as identified by the NHESP.**

Species <sup>a, b</sup>	Type <sup>c</sup>	MESA <sup>d</sup>	Tower <sup>e</sup>
Barren's daggermoth	I	T	WT
Eastern box turtle	R	SC	BA, BR, DE, FA, SA, WE, WT
Faded gray geometer	I	T	WT
Gerhard's underwing	I	SC	WT

- Presented alphabetically, by common name.
- Fact sheets are available at: <http://www.mass.gov/eea/agencies/dfg/dfw/natural-heritage/species-information-and-conservation/mesa-list/list-of-rare-species-in-massachusetts.html>.
- Types of state-listed species include: I = Insect; and R = Reptile.
- Status of species listed under the Massachusetts Endangered Species Act (MESA): E = Endangered, SC = Special Concern; and T = Threatened.
- Fire observation tower codes are: BA = Barnstable; BR = Brewster; DE = Dennis; FA = Falmouth; SA = Sandwich; WE = Wellfleet; and WT = West Tisbury.

### Priority Habitat

Four fire towers are located in Priority Habitat. Two, Sandwich and Brewster, are located in Priority Habitat within larger DCR parks. Information on Priority Habitat in these parks was presented in Sections 2 and 7, respectively. Two other towers, in Wellfleet and West Tisbury, are located on parcels entirely designated Priority Habitat. Projects in these areas are subject to review under MESA.

## Vegetation

There have been no formal vegetation surveys at these fire towers.

### Invasive Species

There have been no formal surveys; species incidentally observed are identified in Table 15.2.3.

**Table 15.2.3. Known invasive and likely invasive plants on fire observation tower lots on the Cape and Islands.**

Species <sup>a</sup>	Status <sup>b</sup>	Tower <sup>c</sup>
Japanese knotweed	I	BA
Oriental bittersweet	I	BA, BR, DE, FA, SA

- Presented alphabetically, by common name.
- Plants are classified as being either Invasive (I) or Likely Invasive (L) according to MIPAG (2005).
- Fire observation tower codes are: BA = Barnstable; BR = Brewster; DE = Dennis; FA = Falmouth; SA = Sandwich; and WE = Wellfleet. The West Tisbury fire tower was not visited.

## Natural Communities

The fenced-in area beneath a fire tower tends to be highly developed, and the vegetation highly artificial. Because of this, those towers with land limited to only the area beneath the tower (i.e., Sandwich, Falmouth, Brewster, and Wellfleet) have no natural communities. In contrast, towers located on larger parcels may have natural communities associated with them.

There are three fire towers on parcels larger than the footprint of the fenced-in area; they are Barnstable, Dennis, and West Tisbury. The area outside the fence at Barnstable has been previously altered to create parking and access to the tower; there are no natural communities present. One community type has been incidentally observed at the Dennis tower. (Table 15.2.4) Natural communities associated with the West Tisbury fire tower have not been assessed.

**Table 15.2.4. Known natural communities of fire observation tower lots on the Cape and Islands.**

Community Type <sup>a</sup>	System <sup>b</sup>	State Rank <sup>c</sup>	Tower <sup>d</sup>	Source <sup>e</sup>
Black Oak-Scarlet Oak Forest/Woodland	T	S3/S4	DE	1

- Classified according to Swain and Kearsley (2011).
- E = Estuarine, P = Palustrine, T = Terrestrial.
- The NHESP ranks communities from most rare (S1) to the most common (S5).
- Fire observation tower codes are: BA = Barnstable; BR = Brewster; DE = Dennis; FA = Falmouth; SA = Sandwich; WE = Wellfleet; and WT = West Tisbury.
- Information contained in this table was obtained from the following sources:
  - Incidentally observed by RMP Planner.

### Forests

Land associated with the Sandwich, Falmouth, Brewster, and Wellfleet towers is not forested. The Barnstable tower lot is partially forested (34.52%). The Dennis and West Tisbury towers are almost entirely forested; 93.19% and 83.82%, respectively.

### Wildlife

There is no information available.

## **15.3. CULTURAL RESOURCES**

This section describes the known and potential cultural resource areas, including pre-Contact and post-Contact archaeological resources, and historic buildings, structures, and landscapes. An overview of significant events in the history of fire observation towers on the Cape and Islands is presented in Table 15.3.1. Their cultural resources are identified in Table 15.3.2.

### **Archaeological Resources**

***Sandwich Fire Observation Tower.*** This tower is located within Shawme-Crowell. See Section 2.3 for information on the Archaeological Resources of Shawme-Crowell.

***Falmouth Fire Observation Tower.*** No archaeological surveys were undertaken prior to building or updating the tower or associated building and utilities. Any below-ground cultural resources would have been destroyed by these activities. Because of this, the entire area within the fenced-in yard has disturbed soils, and is considered to have low archaeological potential.

***Barnstable Fire Observation Tower.*** No systematic archaeological survey work has been conducted on site. Undisturbed portions of his parcel, like the nearby Barnstable State Forest Route 132 parcel (Section 14.3), should be considered to have a high archaeological potential.

**Table 15.3.1. Significant events in the history of fire observation towers on the Cape and Islands.**

<b>Year(s)</b>	<b>Events</b>
1914	Iron observation tower erected atop Howland's Park Hill, Falmouth on town owned land.
1917	Iron fire tower erected on Martha's Vineyard on 15 acres of land purchased for this purpose.
1927	State acquires a 10,000 square foot parcel in Wellfleet and erects an iron forest fire observation tower.
1930	Martha's Vineyard fire tower replaced with galvanized tower.
1934	Members of CCC Camp 58 erect a fire tower in Shawme State Forest, Sandwich.
1946	Falmouth fire tower replaced with a galvanized steel tower.
1946	U.S. Navy declares Martha's Vineyard fire tower a hazard to aviation; the tower is dismantled.
1947	New metal towers constructed atop Clay Hill, Barnstable and Signal Hill, Dennis on land purchased specifically for this purpose.
1949	Galvanized steel fire observation tower erected in Nickerson state park. This replaces a lookout station located in the Exchange Building in Harwich Center.
1950	Land and pole line easement taken for a fire tower on Indian Hill, West Tisbury; a galvanized steel tower is erected.
1960	Wellfleet fire tower replaced with a galvanized steel tower.
1966	Original Sandwich fire tower replaced.
ca. 1969	Barnstable tower upgraded with a new aluminum cabin.
1972	West Tisbury tower upgraded with a new aluminum cabin.
1974	Dennis tower upgraded with a new aluminum cabin.
1984	Cabin of Falmouth fire tower upgraded with a new aluminum cabin.
1987	Cabin of Brewster fire tower upgraded with a new aluminum cabin.
2001	Cabin of Wellfleet fire tower upgraded with a new aluminum cabin.

Table 15.3.2. Cultural resources of fire observation towers on the Cape and Islands.

Location and Resource	Type <sup>a</sup>	Date <sup>b</sup>	Condition <sup>c</sup>	Integrity <sup>d</sup>	In Use <sup>e</sup>	Utilities <sup>f</sup>	MHC # <sup>g</sup>	Guidance <sup>h</sup>
<b>Sandwich Fire Observation Tower</b>	ST	1966	3	M	Y	E	-	1
<b>Falmouth Fire Observation Tower</b>	ST	1946	3	M	Y	E	-	1
<b>Barnstable Fire Observation Tower</b>							-	
Old King's Highway Regional Historic District <sup>i</sup>	NRHD	17 <sup>th</sup> -19 <sup>th</sup> c.	-	M	-	-	BRN.O	-
Barnstable Fire Tower	ST	1947	3	M	Y	E	-	1
<b>Dennis Fire Observation Tower</b>								
Old King's Highway Regional Historic District <sup>i</sup>	NRHD	17 <sup>th</sup> -19 <sup>th</sup> c.	-	M	-	-	DEN.D	-
Dennis Fire Tower	ST	1947	3	M	Y	E	-	1
State Police Building	BU	-	5	M	N	-	-	1
<b>Brewster Fire Observation Tower</b>	ST	1949	3	M	-	E	-	1
<b>Wellfleet Fire Observation Tower</b>							-	
Dogtown Residential District	RD	18 <sup>th</sup> -20 <sup>th</sup> c.	-	-	-	-	WLF.N	-
Wellfleet State Fire Tower	ST	1960	3	M	Y	E	WLF.911	1
<b>West Tisbury Fire Observation Tower</b>	ST	1950	3	M	Y	E	-	1

- a. Resource types include the following: AR = Archaeological; BU = Building; LA = Landscape; NRHD = National Register Historic District; OB = Object; RD = Residential District; and ST = Structure.
- b. Date of construction provided, when known.
- c. Preliminary condition assessment using the building system and equipment condition codes as used in the Massachusetts Capital Asset management Information System (CAMIS). The following codes are used: 1 = Excellent-easily restorable to like new condition; 2 = Good-routine maintenance required; 3 = Adequate-some corrective and preventative maintenance required; 4 = Fair-excessive corrective maintenance and repair required; 5 = Poor-renovation needed; and 6 = Fail.
- d. Integrity is a relative assessment of the condition of a resource's retention of its historic character-defining features; H = High; L = Low; M = Medium; and U = Unknown.
- e. Use categories include N = No, building is not in use; S = Building is used on a seasonal basis; and Y = Yes, building is in use year-round.
- f. The following codes are used to identify utilities associated with buildings: E = Electric; H = Heat; I = Internet; S = Septic system; T = Telephone; W = Water; and W(S) = Water is available on a seasonal basis. This information is included for all buildings.
- g. Massachusetts Historical Commission inventory number.
- h. The following guidance is offered for the ongoing maintenance of these cultural resources:
1. Refer to Historic Building Maintenance BMP (DCR n.d.i).

**Dennis Fire Observation Tower.** No archaeological surveys were undertaken prior to building or updating the tower or associated building and utilities. Any below-ground cultural resources would have been destroyed by these activities. Because of this, the entire area within the fenced-in yard has disturbed soils and is considered to have low archaeological potential. The area within the fenced-in yard at the State Police building is similarly disturbed and is also considered to have low archaeological potential. The remainder of the property on which the tower is located is considered to have a moderate archaeological potential.

**Brewster Fire Observation Tower.** This tower is located within Nickerson. See Section 7.3 for information on the Archaeological Resources of Nickerson.

**Wellfleet Fire Observation Tower.** No archaeological surveys were undertaken prior to building or updating the tower or associated building and utilities. Any below-ground cultural resources would have been destroyed by these activities. Because of this, the entire area within the fenced-in yard has disturbed soils, and is considered to have low archaeological potential.

**West Tisbury Fire Observation Tower.** No documented archaeological sites have been recorded on or near the West Tisbury fire tower parcel. The closest known site is less than one mile northeast of the tower, and has been identified as a Late Archaic stone tool workshop. The area within the fenced-in yard has been highly disturbed and any below-ground cultural resources would have been destroyed by this disturbance. However, undisturbed

areas outside the fenced-in yard and access road have largely escaped disturbance and are considered to have a moderate archaeological potential.

### Historic Resources

The seven historic fire towers in the Nickerson Management Complex have significance as evidence of an important statewide effort, beginning in the early 20<sup>th</sup> century, to protect forest resource and prevent the loss of life and property through the active monitoring and suppression of wildfires. None of the towers has retained their original cabin, but the replacement cabins are in most cases a similar design – an enclosed square cabin with an uninterrupted band of windows to allow a 360-degree view of the surrounding area. The galvanized steel towers replaced iron and wooden versions, but the general design of the replacements are similar in most cases to the original, featuring open stairways returning at platforms spaced equidistantly. This utilitarian construction technique is shared by all existing towers. More research of the construction of fire towers across the Commonwealth is required to better understand the context of the tower planning, design, and construction. In the meantime, any comprehensive planning involving the future of the towers must consider their historic significance to the history of the agency and the state.

Some of the towers are located in or adjacent to historic districts or inventoried areas (see Table 15.3.2). Anyone planning projects that may impact these resources must consult first with the Office of Cultural Resources to determine whether review by the Massachusetts Historical Commission or another pertinent review authority is required.

#### Landscapes

There are no historic landscapes associated with these resources.

#### Buildings

One building, believed to be owned by the Massachusetts State Police, is associated with the Dennis fire tower. This masonry block building is believed to have formerly contained radio equipment.



State Police building located on property of the Dennis fire observation tower. (See Appendix G for photo information.)

#### Structures

Aside from the seven fire towers, there are no historic structures associated with these resources.

#### Objects

There are no historic objects associated with these resources.

### 15.4. RECREATION RESOURCES

Because fire observation towers are not open to the general public or intended for recreation, there are no associated recreation facilities or resources. The parcels of land associated with the Dennis fire tower are large enough for some forms of passive recreation (e.g., birding, geocaching); none are known from this site.

### 15.5. INFRASTRUCTURE

#### Property Boundary

The property boundaries are generally indistinct. Site specific information is provided below.

- ***Sandwich Fire Observation Tower.*** This tower is surrounded on all sides by Shawme-Crowell. A fenced-in area around the base of the tower clearly differentiates it from the rest of the state forest.
- ***Falmouth Fire Observation Tower.*** This tower is surrounded on all sides by Falmouth municipal land. A fenced-in area beneath the tower identifies the area used by the DCR.



- **Barnstable Fire Observation Tower.** This parcel is bounded on the south by the Route 6 right-of-way and on all other sides by private lands. There are no signs identifying the parcel's boundaries.
- **Dennis Fire Observation Tower.** The tower is located on two contiguous parcels of DCR land; both border Hokum Rock Road. Private property, much of which is undeveloped, borders the rest of this property. There are no signs identifying the boundaries.
- **Brewster Fire Observation Tower.** This tower is surrounded on all sides by Nickerson. A fenced-in area around the base of the tower clearly differentiates it from the rest of the state park.
- **Wellfleet Fire Observation Tower.** The property on which this tower is located is bounded on the north by Route 6, on the east and south by a condominium development, and on the west by a developed residence. The only access to the tower is through the condominium development, and the only access to several of the condominiums is through the fire tower parcel. The parcel's boundaries are not posted.
- **West Tisbury Fire Observation Tower.** The fire tower is located on the east side of a narrow, serpentine parcel. Approximately 55 feet of the parcel borders Christiantown Road; the remainder borders private residences and undeveloped house lots. These boundaries are not posted.

### Buildings and Structures

Fire observation towers were constructed for a single purpose, and those on the Cape and Islands have similar infrastructure associated with them. (Table 15.5.1) Each fire observation tower consists of two parts: a tower, which elevates and supports the cabin; and the cabin, which is the workspace for the fire observer. All towers are historic structures; none of the cabins are historic. (Tables 15.3.2 and 15.5.1)

Below the towers, within fenced-in yards, is additional infrastructure. Four towers have equipment shelters that contain telecommunications equipment; most are owned by the Massachusetts State Police who share space with the DCR. Propane-fueled emergency generators and their fuel tanks are associated with police equipment shelters. Additional telecommunications equipment is often

located on metal racks beneath the tower; this is most prevalent at Wellfleet and West Tisbury. A knock box is located on the entry gate to each tower, so that emergency responders have access to the fenced-in yard and cabin.



Typical infrastructure beneath fire observation tower; telecommunications shed is visible at back of photo. (See Appendix G for photo information.)

Because fire observation towers are tall structures typically located on hilltops, they are often used to support communications antennas and associated equipment. A variety of governmental and commercial communications equipment is present on all of the Cape and Islands' towers. There is no current, comprehensive listing of this equipment.



Typical fire observation tower cabin; note the telecommunications equipment mounted on the cabin and top of the tower. (See Appendix G for photo information.)



Occasionally, additional buildings are located beneath, or near, the base of a tower. A masonry block building, formerly used by the U.S. Coast Guard is located beneath the Sandwich Tower. In Dennis, a wooden shed belonging to the Barnstable Repeater Association is located at the base of the tower, and an abandoned State Police building is located in its own fenced-in yard, approximately 210 feet from the tower. Written agreements for these buildings were not located during the preparation of this RMP.



Barnstable Repeater Association shed located beneath the Dennis fire observation tower. (See Appendix G for photo information.)

**Table 15.5.1. Non-historic buildings and structures associated with fire observation towers on the Cape and Islands.**

Infrastructure	Date <sup>a</sup>	Condition <sup>b</sup>	In Use <sup>c</sup>	Utilities <sup>d</sup>
<b>Sandwich Fire Observation Tower</b>				
Observation cabin	-	3	Y	E
State Police equipment shelter	-	2	Y	E
Concrete block building ("Coast Guard" building)	-	3	N	-
<b>Falmouth Fire Observation Tower</b>				
Observation cabin	1984	3	Y	E
State Police equipment shelter	-	2	Y	E
<b>Barnstable Fire Observation Tower</b>				
Observation cabin	1969	3	Y	E
State Police equipment shelter <sup>e</sup>	-	2	Y	E
<b>Dennis Fire Observation Tower</b>				
Observation cabin	1974	2	Y	E
Shed – Barnstable Repeater Association	1998	-	Y	E
<b>Brewster Fire Observation Tower</b>				
Observation cabin	1987	3	Y	E
Concrete block building	-	3	Y	E
<b>Wellfleet Fire Observation Tower</b>				
Observation cabin	1987	3	Y	E
<b>West Tisbury Fire Observation Tower</b>				
Observation cabin	1972	3	Y	E
Eversource (NStar) equipment shelter	-	2	Y	E

a. Date of construction provided, when known.

b. Building system and equipment condition codes as used in the Massachusetts Capital Asset Management Information System (CAMIS): 1 = Excellent-easily restorable to like new condition; 2 = Good-routine maintenance required; 3 = Adequate-some corrective and preventative maintenance required; 4 = Fair-excessive corrective maintenance and repair required; 5 = Poor-renovation needed; and 6 = Fail.

c. Use categories include: N = building is not in use; S = building is used on a seasonal basis; and Y = building is used year-round.

d. The following codes are used to identify utilities associated with buildings: E = Electric; H = Heat; I = Internet; S = Septic system; T = Telephone; W = Water; and W(S) = Water is available on a seasonal basis. This information is included for all buildings.

e. Building is not owned by the DCR, but is located on DCR property.

## Roads

Roads at the Barnstable, Dennis, and West Tisbury towers are on DCR-owned lands; only Dennis is paved, all others are dirt. The condition and length of these roads are identified in Table 15.5.2.

A dirt drive, approximately 125 feet in length connects the Falmouth fire tower to Fire Tower Road. This drive is not on DCR property.

The Brewster tower is accessed via Deer Park Road, an internal park road in Nickerson. Information on Nickerson's roads was previously presented in Section 7.

Access to the Wellfleet fire tower has been across private property since at least 1928. As a result, there are no DCR roads at this location.

**Table 15.5.2. Condition and length of roads associated with fire observation towers on the Cape and Islands.<sup>a,b</sup>**

Location and Road Condition	Length (Miles)
<b>Barnstable Fire Observation Tower</b>	
Good	0.02
Fair	0.01
Poor	0.00
<b>Sub-total</b>	0.03
<b>Dennis Fire Observation Tower</b>	
Good	0.00
Fair	0.06
Poor	0.00
<b>Sub-total</b>	0.06
<b>West Tisbury Fire Observation Tower</b>	
Good	0.00
Fair	0.23
Poor	0.00
<b>Sub-total</b>	0.23
<b>Total</b>	0.32

a. Based on field assessment; all distances calculated using GIS.

b. Includes both paved and unpaved roads.

## Parking

Parking is restricted to Bureau of Forest Fire Control and Forestry staff, and others needing to access equipment on and below these towers (e.g., telecommunication providers). There is no public parking.

## Trails

Fire tower parcels are generally too small to support a trail system. Only one tower, Dennis, has a lot large enough to support a trail system; none exists.

## Kiosks and Signs

There are no kiosks. All towers have signs that identify their name and elevation; most also identify the name of the hill upon which they are located. Only the Brewster fire tower's sign meets DCR graphic standards (DCR n.d.e).

## Iron Ranger

There are no iron rangers.

## Memorials and Markers

There are no known memorials or markers.

## 15.6. INTERPRETATION

There is no interpretive programming at fire observation towers.

## 15.7. MANAGEMENT RESOURCES

### Staffing

#### DCR Personnel

All towers are managed by Bureau of Forest Fire Control and Forestry personnel. (Table 15.7.1) Historical staffing levels, from 1983, are included for comparison to current staffing.

There are two year-round personnel; they are supplemented by five seasonal personnel during the summer. One seasonal patrolman is assigned to the West Tisbury fire observation tower. The other four are rotated among the remaining towers on an as needed basis.

**Table 15.7.1. Personnel with direct responsibility for the operation and management of fire observation towers on the Cape and Islands; current and past.**

Job Title	Number of Positions 2014 <sup>a</sup>	Number of Positions 1983 <sup>a</sup>
<i>Year-round Personnel</i>		
Fire Fighter III - District Fire Warden	1	1
Fire Fighter II - Patrolman	1	3
Fire Fighter I - Truck Operator	0	3
Fire Fighter I - Tower Operator	0	1
<i>Seasonal Personnel</i>		
Fire Fighter I - Patrolman <sup>b</sup>	5	0
Fire Fighter I - Truck Operator	0	3
Fire Fighter I - Tower Operator	0	12

a. Includes staffing for Bourne fire observation tower, which is not in the Nickerson Management Complex.

b. Seasonal patrolmen perform duties once performed by seasonal Tower Operators.

### Partnerships and Volunteers

The Barnstable Repeater Association maintains their shed and equipment at the Dennis fire observation tower.

### Public Safety

Fire, police, and other public safety and emergency services are provided by municipal departments in the communities in which the towers are located.

### Funding

#### Conservation Trust Fund

There are no Conservation Trust Funds for these properties.

#### Retained Revenue

There are no retained revenues.

#### Other Revenues

Revenues are generated through the leasing of antenna space on towers; these funds are not dedicated to the towers.

## **15.8. MANAGEMENT PRACTICES**

Management of DCR properties is guided by a variety of regulations, policies, BMPs (e.g., Table 15.3.2), legal agreements, and institutional knowledge. This section describes those practices

unique to the management of the Cape and Islands' fire observation towers.

Some legal agreements unique to these properties are presented in Table 15.8.1. Because a current inventory of communications equipment attached to DCR fire observation towers was unavailable during the preparation of this RMP, legal agreements for communications equipment are not included in Table 15.8.1.

**Table 15.8.1. Key legal agreements for fire observation towers on the Cape and Islands.**

Party and Subject of Agreement	Type <sup>a</sup>	Expiration Date <sup>b</sup>
<b>United States Coast Guard</b> Use of Sandwich fire observation tower by the Coast Guard for a radio transmission facility for the safety of the boating public.	A	2012
<b>Department of State Police</b> High Ground Special Use Permit...for use of multiple fire and radio towers.	HG	2017
<b>John C. and Joan A. Marshall</b> Access agreement for 1947 State Highway, Wellfleet, MA.	AC	None
<b>Unknown Status<sup>c</sup></b>		
<b>Eversource (formerly NStar and Commonwealth Electric)</b> Siting of equipment shelter at West Tisbury fire observation tower.	-	-

a. Agreement types include: A=Memorandum of Agreement; AC = Access Agreement; E=Easement; L=Lease; R = Recreation Permit; S = Special Use Permit; and U=Memorandum of Understanding.

b. Year that agreement expires. Permanent agreements are indicated by an expiration date of "None."

c. Unknown status includes uses for which there is no agreement and uses for which an agreement exists but was not located during the preparation of this RMP.

There are no key management or guidance documents for the fire observation towers.

### **Annual Maintenance**

There are no annual maintenance schedules for these properties.

### **Natural Resources**

#### Water Resources

There are no management activities unique to these properties.

### Rare Species

Because the access road to the West Tisbury Fire Tower is located within Priority Habitat, road maintenance and other activities along this road (e.g., pruning tree limbs, mowing) are subject to NHESP review. Activities at the three other towers in Priority Habitat (i.e., Sandwich, Brewster, and Wellfleet) are also subject to review.

### Invasive Species

There are no monitoring or management activities.

### Vegetation

Fire Control District One personnel are responsible for maintaining vegetation along the utility lines from Hokum Rock Road to the Dennis tower.

Fertilizers are not used at any of the towers.

### **Cultural Resources**

The Barnstable and Dennis fire towers are within the Old King's Highway Regional Historic District. Changes in the exterior of buildings, structures, fences; new construction; and demolition are subject to review by the Old King's Highway Historic District Committee. See the committee's web page for additional information. (<http://www.townofbarnstable.us/OldKingsHighway>)

### **Recreation Resources**

There are no recreation management activities.

### **Infrastructure**

#### Buildings

Major cabin repairs are performed by contractors; minor repairs are performed by district fire control personnel.

The High Ground Special Use Permit with the Department of State Police includes a provision that they provide the DCR approximately 40% of the space within their equipment shelters at the fire observation towers in Falmouth, Sandwich, and Barnstable.

Under the terms of a 2007 Memorandum of Agreement between the DCR and the U.S. Coast Guard, all Coast Guard assets remaining on DCR property after the dissolution of the agreement are

transferred to the DCR. It is likely that this is how the "Coast Guard" building at the Sandwich fire observation tower came under the DCR's control.

The Barnstable Repeater Association's equipment shed at the Dennis fire observation tower was constructed in 1998 following verbal approval of a verbal request; there was no written agreement. Because of this, there is no formal assignment of responsibility for the operation, maintenance, or repair of this building.

### Roads

The road to the West Tisbury fire tower is maintained by Bureau of Forest Fire Control and Forestry staff. Roads to the Barnstable and Dennis towers are infrequently repaired and require no ongoing maintenance.

A 1999 Access Agreement allows DCR personnel and vehicles to use a private driveway to cross private land (1937 State Highway) in order to access the Wellfleet fire tower. In return, the adjacent property owners and their guests are allowed to drive across DCR property.

### Parking Areas

There are no public parking areas to maintain.

### Trails

There are no formal trails to maintain.

### Kiosks and Signs

Signs are maintained by Fire Control District One personnel.

## **15.9. RECOMMENDATIONS**

### **Introduction**

This section provides recommendations for the near- and long-term management of fire control towers on the Cape and Islands. Applied Land Stewardship Zoning recommendations provide general guidance for managing these towers. Future activities and projects should be checked against the recommended Land Stewardship Zoning, below, for consistency. Management recommendations for the towers are all high-priority, and should be addressed as soon as resources become available.



## Applied Land Stewardship Zoning

The following Land Stewardship Zoning is recommended for fire observation towers on the Cape and Islands. There is no map associated with this zoning.

### Zone 1

- No land associated with fire observation towers has been designated Zone 1.

### Zone 2

- All portions of the Dennis and West Tisbury fire observation tower parcels outside of the fenced-in yards beneath the towers are designated Zone 2.

### Zone 3

- The area beneath all fire observation towers, within the fenced-in yard, has been designated Zone 3.
- All additional portions of the Barnstable and Wellfleet fire observation tower parcels.

## Significant Feature Overlay

There are no Significant Feature Overlays.

## Management Recommendations

Seven priority management recommendations were developed for fire observation towers on the Cape and Islands. (Table 15.9.1) For a recommendation to be considered priority it must address one or more of the following criteria:

- Regulatory compliance or compliance with legal agreements.
- Threats to the health and safety of park visitors and employees.
- The imminent loss of a natural, cultural, or recreation resource.

Additional maintenance and management needs observed during the preparation of this RMP, but not meeting one or more of the above criteria, are not included in this plan.

The following recommendations are of equal priority.

**Table 15.9.1. Priority recommendations for fire observation towers on the Cape and Islands.**

Recommendation	Implementation <sup>a</sup>
Submit ongoing vegetation and road maintenance activities at the Sandwich, Brewster, Wellfleet, and West Tisbury fire observation towers to the NHESP for review under MESA.	F
Conduct a state-wide survey of the condition and cultural significance of all fire observation towers in Massachusetts; develop management guidelines as warranted.	C, F, P
Determine ownership of the State Police building at the Dennis fire tower. If owned by the DCR, stabilize and mothball in accordance with Mothballing BMP (DCR n.d.i).	F, P
Determine if an agreement exists for the presence of the fire observation tower on Falmouth municipal land; establish an agreement with the town if warranted.	L
Conduct an expanded file review to determine the current status of the permit for the Eversource (NStar) equipment shelter at the West Tisbury fire observation tower.	P, R
Establish a formal agreement with Barnstable Repeater Association for siting of shed at Dennis fire observation tower.	L
Conduct an inventory of all antennas and communication equipment on fire observation towers, compare against existing legal agreements, and establish new agreements as warranted.	F, L

a. The following codes identify the party or parties responsible for implementing the recommendations: B = Bureau of Ranger Services; C = Contractor; E = Division of Engineering; F = Bureau of Forest Fire Control and Forestry; L = Legal Services; O = Other; P = Bureau of Planning, Design & Resource Protection; R = Regional and district staff; U = Universal Access Program; V = Volunteer or partner; and X = Office of External Affairs and Partnerships.

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